



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0889; Project Identifier AD-2021-00614-T]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all The Boeing Company Model 787-8, 787-9, and 787-10 airplanes. This proposed AD was prompted by reports of ram air turbine (RAT) pump barrel assembly failures, which caused the RAT to fail to provide hydraulic power. The failures were determined to be caused by variations in the bronze metal used during manufacturing, which can result in varying fatigue properties. This proposed AD would require an inspection or records review to determine the part number of the RAT pump and control module (PCM) and of the RAT assembly, and replacement of any RAT PCM or any RAT assembly having certain part numbers. This proposed AD would also prohibit the installation of affected parts. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0889.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0889; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Douglas Tsuji, Senior Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th

St., Des Moines, WA 98198; phone and fax: 206-231-3548; email:

douglas.tsuji@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-0889; Project Identifier AD-2021-00614-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Douglas Tsuji,

Senior Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3548; email: douglas.tsuji@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA has received a report indicating that RAT pump barrel assembly failures during production flights have caused the RAT to fail to provide hydraulic power. An investigation by the manufacturer determined that the failures are caused by variations in the bronze material used during the manufacturing process, which can result in varying fatigue properties. The varying fatigue properties of the RAT pump cylinder block, along with fatigue cracks, can result in failure of the RAT pump, which is a component within the RAT PCM and the larger RAT assembly. This condition, if not addressed, could cause fatigue or cracking of the hydraulic pump bronze cylinder block and lead to failures of the RAT pump and subsequent loss of backup hydraulic power for the flight controls, which can result in loss of continued safe flight and landing.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed Boeing Alert Requirements Bulletin B787-81205-SB290039-00 RB, Issue 002, dated October 26, 2021. This service information specifies procedures for replacing any RAT PCM having part number (P/N) 7001267H06 with P/N 7001267H07, and replacing any RAT assembly having P/N 7000011H08 with P/N 7000011H09.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Proposed AD Requirements in this NPRM

This proposed AD would require an inspection or records review to determine the part number of each RAT PCM and RAT assembly. This proposed AD would also require accomplishing the actions specified in the service information already described, except for any differences identified as exceptions in the regulatory text of this proposed AD. This proposed AD would also prohibit the installation of affected parts. For information on the procedures and compliance times, see this service information at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0889.

Differences Between this Proposed AD and the Service Information

The effectivity of Boeing Alert Requirements Bulletin B787-81205-SB290039-00 RB, Issue 002, dated October 26, 2021, is limited to Model 787-8, 787-9, and 787-10 airplanes, having certain line numbers between 6 and 1048. However, the applicability of this proposed AD includes all Boeing Model 787-8, 787-9, and 787-10 airplanes. Because the affected RAT PCMs and RAT assemblies are rotatable parts, the FAA has determined that these parts could later be installed on airplanes that were initially delivered with acceptable RAT PCMs and RAT assemblies, thereby subjecting those airplanes to the unsafe condition.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 148 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection or records review	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$12,580

Estimated costs for optional actions

Action	Labor cost	Parts cost	Cost per product
Replace RAT PCM	5 work-hours X \$85 per hour = \$425	Up to \$95,210	Up to \$95,635
Replace RAT assembly	5 work-hours X \$85 per hour = \$425	Up to \$680,912	Up to \$681,337

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national

Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

The Boeing Company: Docket No. FAA-2022-0889; Project Identifier

AD-2021-00614-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by

[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all The Boeing Company Model 787-8, 787-9, and 787-10 airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 29, Hydraulic power.

(e) Unsafe Condition

This AD was prompted by reports of ram air turbine (RAT) assembly failures, which caused the RAT to fail to provide hydraulic power. The failures were determined to be caused by variations in the bronze metal used during manufacturing, which can result in varying fatigue properties. The FAA is issuing this AD to address fatigue or cracking of the RAT hydraulic pump bronze cylinder block. This condition, if not addressed, could cause failure of the RAT pump and subsequent loss of backup hydraulic power for the flight controls, which can result in loss of continued safe flight and landing.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Inspection

For airplanes with an original airworthiness certificate or original certificate of airworthiness issued on or before the effective date of this AD: Within 60 months after the effective date of this AD, inspect the RAT pump and control module (PCM) and the RAT assembly to determine the part number. A review of airplane maintenance records is acceptable in lieu of this inspection if the RAT PCM and the RAT assembly part numbers can be conclusively determined from that review.

(h) Replacements

If, during the inspection required by paragraph (g) of this AD, any RAT PCM having part number (P/N) 7001267H06 or any RAT assembly having P/N 7000011H08 is found: Except as specified by paragraph (i) of this AD, at the applicable times specified

in the “Compliance” paragraph of Boeing Alert Requirements Bulletin B787-81205-SB290039-00 RB, Issue 002, dated October 26, 2021, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin B787-81205-SB290039-00 RB, Issue 002, dated October 26, 2021.

Note 1 to paragraph (h): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin B787-81205-SB290039-00, Issue 002, dated October 26, 2021, which is referred to in Boeing Alert Requirements Bulletin B787-81205-SB290039-00 RB, Issue 002, dated October 26, 2021.

(i) Exception to Service Information Specifications

Where Boeing Alert Requirements Bulletin B787-81205-SB290039-00 RB, Issue 002, dated October 26, 2021, uses the phrase “the Issue 001 date of Requirements Bulletin B787-81205-SB290039-00 RB,” this AD requires using “the effective date of this AD.”

(j) Parts Installation Prohibition

(1) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued after the effective date of this AD: Installation of a RAT PCM, part number (P/N) 7001267H06, or RAT assembly, P/N 700011H08, is prohibited as of the effective date of this AD.

(2) For airplanes with an original airworthiness certificate or original export certificate of airworthiness issued on or before the effective date of this AD, installation of a RAT PCM, P/N 7001267H06, or RAT assembly, P/N 700011H08, is allowed until the actions required by paragraph (h) of this AD are accomplished.

(k) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraph (h) of this AD, if those actions were performed before the effective date of this AD using Boeing

Alert Requirements Bulletin B787-81205-SB290039-00 RB, Issue 001, dated November 3, 2020.

(l) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (m) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(m) Related Information

(1) For more information about this AD, contact Douglas Tsuji, Senior Aerospace Engineer, Systems and Equipment Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3548; email: douglas.tsuji@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd.,

MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on July 18, 2022.

Christina Underwood,

Acting Director,

Compliance & Airworthiness Division,

Aircraft Certification Service.

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